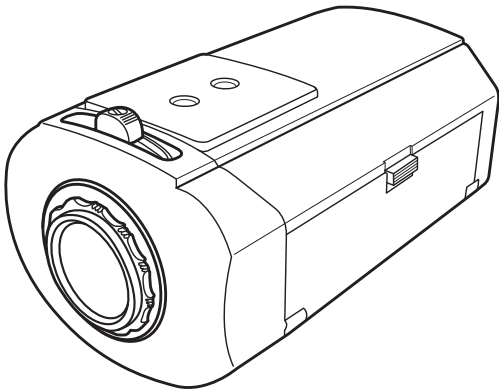


High Resolution

True Day/Night Box Camera

QUICK START GUIDE



This camera is the ideal solution for security and surveillance needs. It provides excellent quality even in low-light conditions, features zone blocking to safeguard your privacy, and remote control via an RS485 port.



Important Notes

Safety Information

This product is intended for security and surveillance CCTV applications. It must be installed and maintained in accordance with good installation practices.

- Installation and servicing must only be carried out by qualified personnel.
- To avoid risk of damage or electric shock, do not attempt to service this product or open the chassis.
- This product contains no user-serviceable parts.
- Low voltage cameras must be powered from a UL listed class 2 power supply.
- For outdoor use, please employ an IP65 (or better) certified protective housing.
- Mains cameras are not evaluated by UL.

CAUTION: To prevent risk of fire or electric shock, do not expose this product to rain or moisture.

This camera is designed for indoor general-purpose CCTV applications only. Do not expose to extreme conditions such as temperatures outside the range of -10°C~50°C (14°F~122°F).

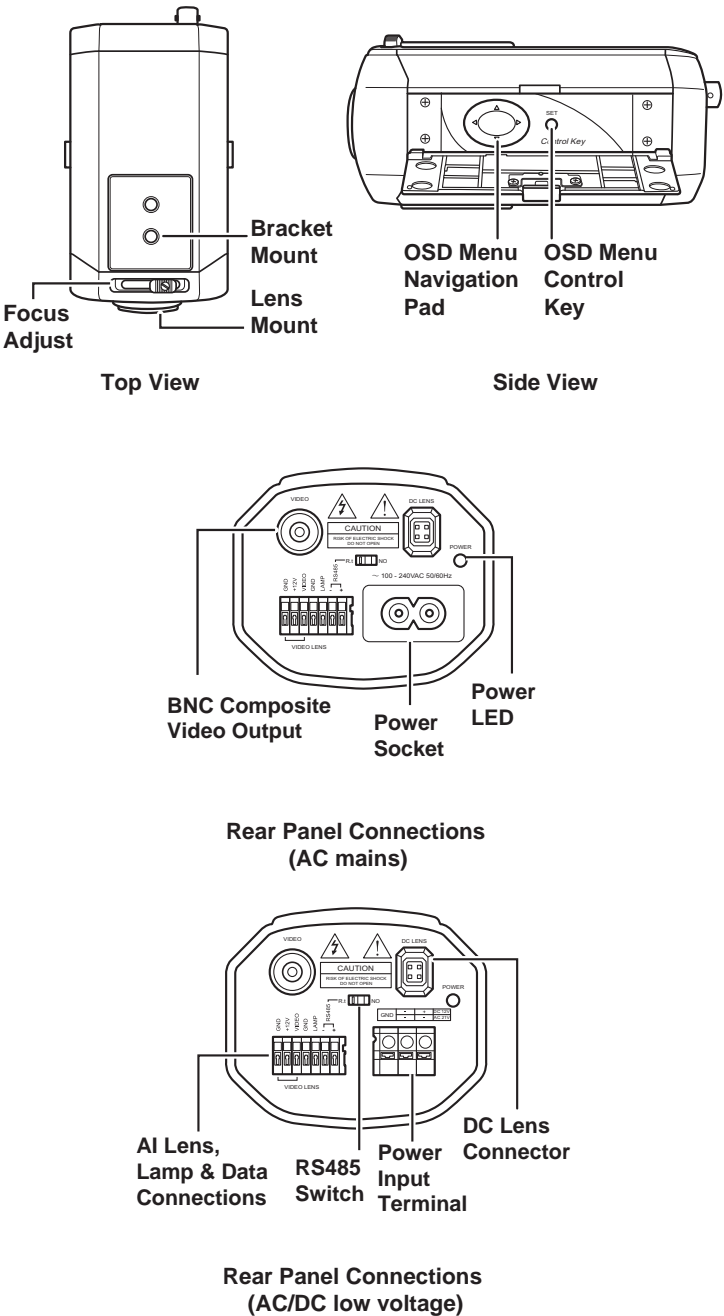
This camera must be used in a clean, dry, dust-free environment unless enclosed in an IP65 (or better) certified housing.

Electromagnetic Compatibility (EMC)

The manufacturer declares that this product is compliant with EMC directive 89/336, and Low Voltage Directive LVD 73/23 EEC, conforming to the requirements of standards EN 55022 for emissions, IEC801 parts 2, 3 and 4 for immunity, and EN 60065 for electrical equipment safety.

NOTE: This is a class B product. In a domestic environment this product may cause radio interference.

Name and Function of Parts



Mounting Your Camera

Your camera can be mounted from the top or bottom, either on a bracket or tripod. The mounting points accept standard photographic mounting bolts (1/4" BSW or 20 UNC).

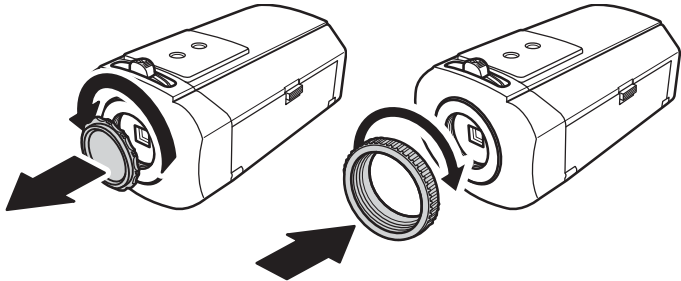
The mounting bracket must be capable of supporting the camera and the lens.

Should the lens be substantially heavier than the camera, it is recommended to use the mounting point on the lens itself.

NOTE: Ensure the bracket anchors and mounting surface can support the load of the camera and bracket.

Installing Lenses

Before installing a lens, you must first remove the lens cover from the camera. If mounting a C-Mount lens, attach the spacer ring to the camera.



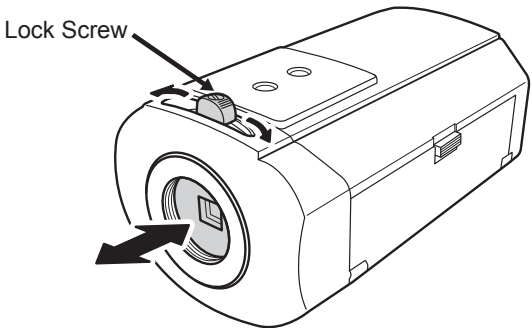
Installing Fixed and Manual Lenses

1. If using a C-mount lens, slide the back focus adjustment fully to the left with the lens facing towards you (see Setting the Focus).
2. Screw the lens on to the camera.
3. Ensure the electronic iris and automatic gain control are both ON.
4. If the lens has an iris, open this fully.
5. If the lens has a focusing ring fitted, set it to infinity (∞) and then adjust the back focus.
6. If the lens has an iris, close according to the required depth of field.

Setting the Focus

To adjust the image focus, there is a back focus adjustment mechanism located at the front of the camera, above the lens. If a C-Mount lens is to be used on the camera, the supplied adaptor ring should be mounted to the camera first. Failure to do this may cause damage to the IR Cut filter mechanism and CCD. Use the following procedure to adjust the focus:

1. Unscrew (loosen) the back focus adjustment lock screw.
2. Slide the focus adjustment to the left (if facing the lens) to move the CCD sensor away from the back of the lens or to the right to move the CCD sensor towards the back of the lens.
3. Tighten the screw to lock the back focus adjustment in place.



Connecting

Connecting to a Power Supply

**Mains Power Supply:** This camera operates directly from the mains supply and is supplied with a detachable power supply cord. The operating voltage is 100~250VAC

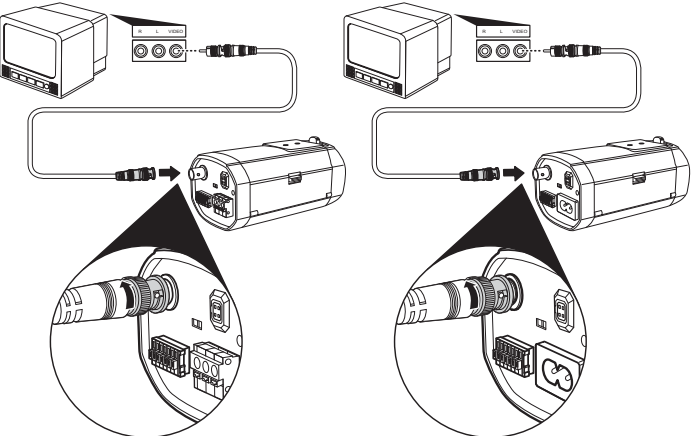
**Low Voltage Power Supply:** This camera operates between 11~28 VDC and 20-29VAC. Connections are indicated above the terminals on the rear panel of the camera. The power supply must be a UL listed class 2 type.

The power LED on the rear panel is lit when the camera is connected to a power source.

NOTE: The typical power consumption of a camera is less than 5 Watts.

Connecting to a TV / Video

Connect a video coaxial cable terminated with a 75 Ω BNC connector to the BNC socket labeled VIDEO OUT. Connect the other end of the cable to the VIDEO IN socket of your video or television equipment.



Installing a Direct (DC) Drive Lens

- 1. If using a C-mount lens, fit the C-mount adaptor ring and slide the back focus adjsutment fully to the left with the lens facing towards you (see Setting the Focus).
- 2. Fit the lens to the camera and connect it to the DC lens socket, as defined by the pin assignments in Figure 1.

CAUTION: The maximum load for this type of lens must not exceed 25mA.

- 3. Access the menu and select LENS > BF. (See LENS - BF Function)
- 4. If a focus ring is fitted on the lens, set it to infinity (∞) and then adjust the back focus.
- 5. Exit the BF menu to return to normal operation.

Installing a Video Drive Lens

- 1. If using a C-mount lens, fit the C-mount adaptor ring and slide the back focus adjsutment fully to the left with the lens facing towards you (see Setting the Focus).
- 2. Fit the lens to the camera and connect it to the Video Lens connector, as defined by the pin assignments in Figure 2.

CAUTION: The maximum load for this type of lens must not exceed 50mA.

- 3. Access the menu and select LENS > BF. (See LENS - BF Function)
- 4. If a focus ring is fitted on the lens, set it to infinity (∞) and then adjust the back focus.
- 5. Exit the BF menu to return to normal operation.

Setting Video Drive Lens Level

- 1. Access the menu and select: DAY MODE > SETTING > AGC.
- 2. Note the current value. Then set to "1" and exit the menu.
- 3. Adjust the lens level potentiometer for the correct exposure. (This can be achieved manually, or by using an oscilloscope or level meter to set the output of the camera to 1V peak-peak).
- 4. Return the AGC to the previously noted setting.

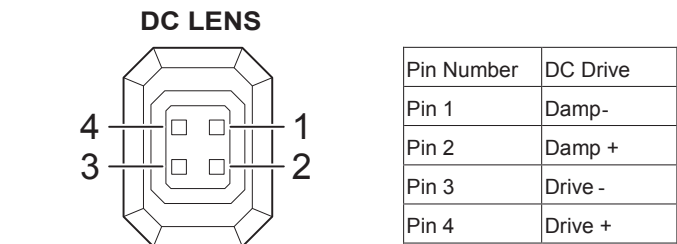
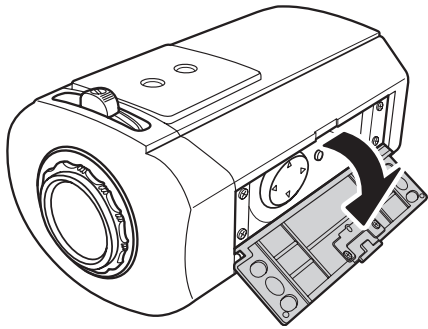


Figure 1

Menu Navigation

Open the panel on the side of the camera to access the Navigation Control Pad and Set Key.



Press and hold the **SET** Key on the side of the camera to access the main menu  
Use the Up/Down buttons on the Contol Key to select the desired menu option. If a sub menu is available, this is indicated by ▼  
Pressing the **SET** key will open the sub-menu.  
Values are changed using the Left/Right buttons.  
Remember to select SAVE before exiting the menu or else changes will not be implemented when the camera is next powered up.

LENS - BF Function

This function provides the installer with a simplified method of adjustment of optical back focus. When used with an auto iris lens, this function will automatically fully open the IRIS of the lens and switch the camera to AES (auto electronics shutter) mode whilst the BF option is selected. In the case of a manual lens, this function will automatically switch to AES.  
Move the cursor to **LENS** with the Control Key, select **BF** and press **SET** key. Whilst in BF mode “ Press SET for return” is displayed on the monitor.  
Adjust the optical back focus for optimum focus then press **SET** key to return to the top menu. ( Please refer to section “Setting the Focus” ).

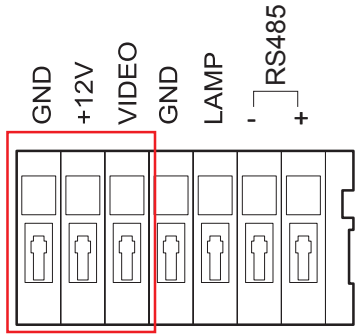
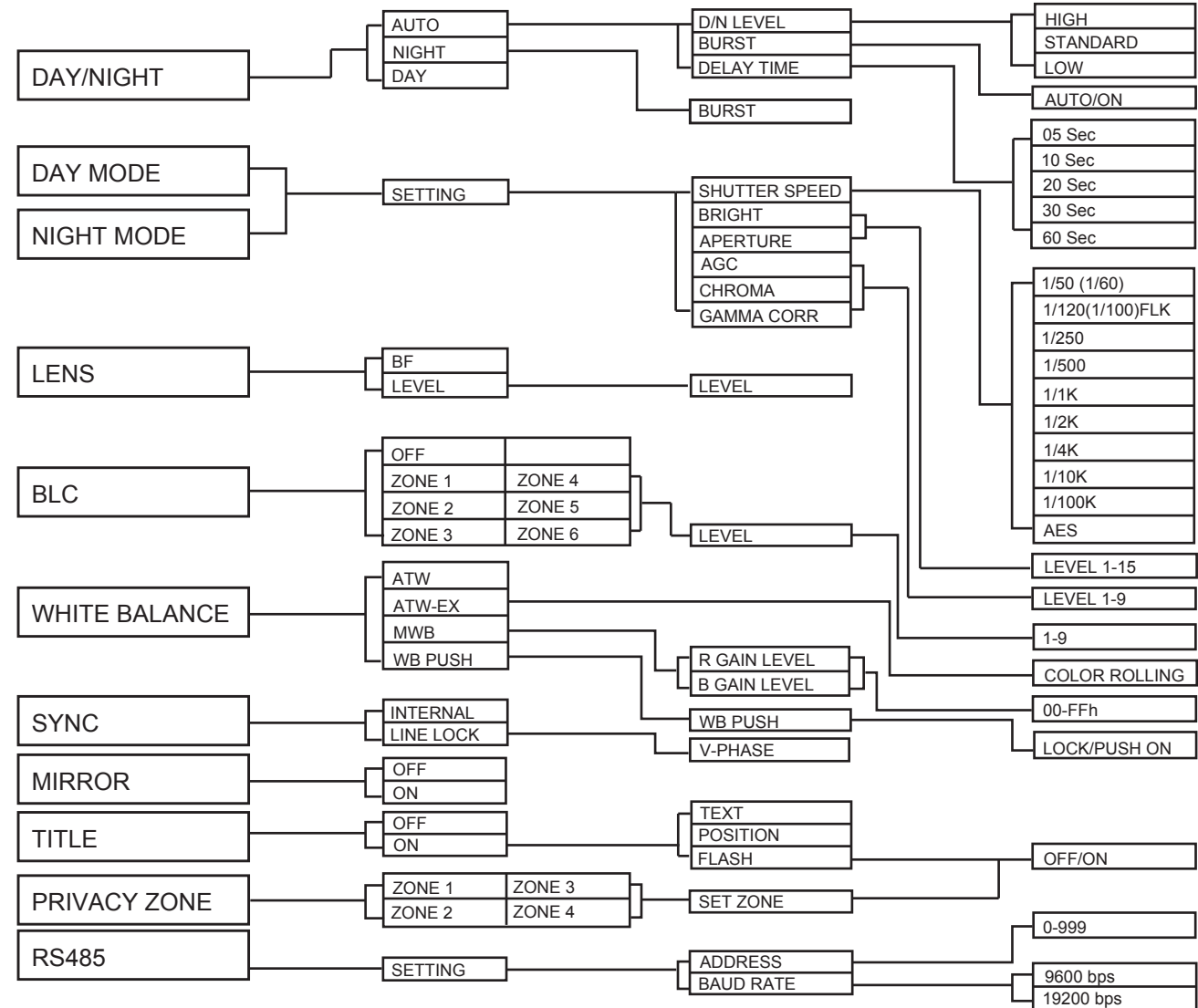


Figure 2

Camera OSD Menu



Specifications

General	NTSC	PAL
Image Size	1/3 Format Interline CCD Sensor	
Pixel Element	768(H) x 494(V)	752(H) x 582(V)
Scanning Frequency	NTSC 2:1 Interlace	PAL 2:1 Interlace
	H:15750Hz V:59.94Hz	H:15625Hz V:50.0Hz
Operation/Storage Temperature	-10°C~50°C / -20°C~60°C	
Relative Humidity	<90% Non-Condensing	
Output Terminal	BNC 75Ω unbalanced	
Power Source	AC Supply	20~29VAC
	DC Supply	11~28VDC
Power Consumption	4.5W Max	
Power Indicator	3Ø Green LED on Rear Panel	
IRIS Connector	Video Drive	3pin Push Lock Terminal Block on Rear
	DC Drive	4pin Connector on Rear
Lens Mount	CS Mount, Change C Mount by Adaptor	
Back Focus Adjust	CS Mount 12mm +/- 1.0mm, Adjust by screw	
Mounting Hole	1/4" Top and Bottom	
External Dimension	73mm(W) x 63mm(H) x 122mm (L)	

Functional Specification	NTSC	PAL
Exposure Control	Auto Detection for AES (Fixed Iris), DC Iris or Video Iris Lenses.	
AES	Auto Luminance Control	
	1/60 (1/50) ~ 1/100000 sec Max.	
MES	8 Step: 1/60(1/50), 1/120(1/100), 1/500, 1/1000, 1/2000, 1/5000, 1/10000	
Auto IRIS Control	Video Drive / DC Drive Separate Output	
Video IRIS Output	600mV Vpp (100IRE Video Output)	
DC IRIS Output	1.2V at 85Ω Impedance	
White Balance	Auto White Balance/ Push White / Manual White Balance	
Auto White Balance Range	Standard Range: 2700K ~ 9700K	
	Extended Range: 2500K ~ 15000K	
Manual White Balance Range	1 Preset; R gain and B gain Adjustable	
Day & Night	Optical Low Pass Filter Removable (Auto Detect) <Fuzzy 30 IRE ~80 IRE>	
IR Lamp Trigger	External Relay Contact input for IR switching	
AGC Boost	Enhanced AGC Gain to Max. 30dB	
Color Killer	Fuzzy / ON / OFF	
SYNC System	INT / Line Lock	
Line Lock	Phase Adjust Range	0°C~270°C
	Frequency Range	60Hz +/- 1Hz 50Hz +/- 1Hz

Video Specification	NTSC	PAL
Resolution	Normal Mode	540 TV Line
	TDN Mode	570 TV Line
Minimum Illumination	Day Mode	0.6Lux @ F=1.2 (50IRE Video Output)
	Night Mode	0.1Lux @ F=1.2 (40IRE)
Video Output	1.0Vpp 75Ω BNC unbalance	
S/N Ratio	95 IRE	50dB
	40 IRE	38dB
AGC Max Gain	Close IRIS	38dB
		30dB
AGC Default Gain	24dB	
White Clip	120 IRE Max	
Pedestal Level	7.5 +/- 2.5 IRE	
SYNC Level	40 +/- 2 IRE	
Burst Level	40 +/- 2 IRE	
Aperture	15 Step, Level adjustable 0 IRE~15 IRE (r=0.45 @ 100 IRE output)	
Mirror	ON / OFF	
Gamma Compensation	9 Step	
Gamma Crosses Point	55 IRE ~ 65 IRE	
Gamma Block Level	10 IRE ~ 15 IRE	
Bright Level	15 Step	
Chroma Level	9 Step	

Function Control or Adjustment	NTSC	PAL
Exposure Control	Auto Detect	
Color Killer	Fuzzy ON / OFF	
BLC	6 Areas with adjustable levels	
Auto White Balance	2700K~9700K / 2500K~15000K	
AGC Gain Control	18dB~30dB Linear Adjustment	
SYNC System	INT / LL Switchable	
V-Phase	0°~270°	
Remote Control	* RS-485, Two way communications	
Address	000~999	

\* RS-485  
For further information on the remote RS485 control contact your local representative